HAINBUCH
SPANNENDE TECHNIK

Installation manual

EN

Clamping force tester TESTit

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»Translation of original installation manual«

1 General

1.1 Information about this manual

This manual enables safe and efficient handling of the product.

The manual is a component of the product and must be kept in the immediate vicinity of the product where it is accessible for personnel at all times. Personnel must have carefully read and understood this manual prior to starting all tasks. The basic prerequisite for safe work is compliance with all the safety instructions and handling instructions in this manual.

Illustrations in this manual are provided for a basic understanding and may deviate from the actual model of the product.

It is assumed that the reader is familiar with standard procedures, such as cleaning the mounting surfaces.

1.2 Explanation of symbols

Safety instructions

Safety instructions are indicated by symbols in this operating manual. The safety instructions are introduced by signal words that express the scope of the hazard.

The safety instructions must be strictly adhered to, you must act prudently to prevent accidents, personal injury, and material damage.

DANGER!

… indicates an imminent dangerous situation than can result in death or serious injury if it is not avoided.

WARNING!

… indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.

CAUTION!

… indicates a possible dangerous situation that can result in minor or light injury if it es not avoided.

NOTE!

… indicates a possible dangerous situation that can result in material damage if it is not avoided.

Tips and recommendations

… indicates useful tips and recommendations, as well as information for efficient and trouble-free operation.

1.3 Limitations of liability

All information and instructions in this operating manual have been provided under due consideration of applicable standards and regulations, the current state of technology, as well as our many years of experience.

The manufacturer assumes no liability for damage due to:

- Failure to follow the instructions in the manual
- Non-intended use
- Deployment of untrained personnel
- Unauthorized conversions
- Technical changes
- Use of non-approved spare parts

The actual scope of delivery can vary from the explanations and graphic representations provided in this manual in the case of special versions, if supplemental order options are desired, or on the basis of the latest technical changes.

The agreed obligations in the delivery contract, the general terms and conditions, as well as delivery conditions of the manufacturer, and the statutory regulations valid at the time the contract was concluded, apply.

1.4 Max. RPM

The maximum allowed RPM for using the TESTit see technical data.

1.5 Copyright

This manual is protected by copyright and is provided exclusively for internal purposes.

Delivery of the operating manual to third parties, duplication in any form – including excerpts – as well as exploitation and/or communication of the content, are not permitted [except for internal use] without written approval from the manufacturer.

Actions to the contrary make damage compensation mandatory. We reserve the right to enforce additional claims.

1.6 Scope of delivery

In scope of delivery of the TESTit starter set:

- 1 Netbook
- 1 Measuring head
  with service pass and test protocol
- 1 USB charging cable
- 1 USB charger / AC adapter
- 1 Storage case

In scope of delivery of the TESTit measuring head:

- 1 Measuring head
  with service pass and test protocol
- 1 USB charging cable

1.7 Warranty terms

The warranty terms are included in the manufacturer's terms and conditions.

NOTE!

The software is pre-installed on the netbook [in scope of delivery].

Any system change or external influence such as

- Installing of additional software
- Software updates
- Connection with external devices and/or network

may influence or even destroy the TESTit software and therefor it is prohibited.

The warranty for the TESTit is 1 year from delivery!

HAINBUCH assumes no responsibility for data loss on the netbook!

1.8 CFK

In case of visible damage or visible wear of the carbon parts:

- Further processing only after consultation with HAINBUCH.

2 Safety

This section provides an overview o fall the important safety aspects for optimal protection of personnel, as well es for safe and trouble-free operation.

2.1 Responsibility of the customer

The device is used in industrial applications. Consequently the owner of the device is subject to legal industrial safety obligations.

In addition to the safety instruction in this manual, generally valid safety and accident protection guidelines, and environmental protection guidelines must be adhered to and complied with for the area of implementation of the device.

NOTE!

Always keep this manual next to the measuring device TESTit.

The manual must always be handy!

2.2 Personnel requirements

WARNING!

Danger of injury due to insufficient qualification!

Improper handling of the clamping device can cause serious injury or material damage.

- Only have activities performed by personnel who are qualified to perform these activities.

The following qualifications are cited in the operating manual for the various activity areas.

- Specialized personnel
  are personnel who due to their specialized training, skills, and experience, as well as knowledge of the applicable regulations, are capable of executing the tasks assigned to them and of recognizing and avoiding

possible hazards on their own.

- **Hydraulic specialist**
  The hydraulic specialist has been trained for the particular task area in which he is active and is familiar with the relevant standards and regulations. Due to his specialized training and experience the hydraulic specialist can perform tasks on hydraulic equipment and recognize and avoid possible dangers on his own.
- **Electric specialist**
  The electric specialist has been trained for the particular task area in which he is active and is familiar with the relevant standards and regulations.
  Due to his specialized training and experience the electric specialist can perform tasks on electric equipment and recognize and avoid possible dangers on his own.

Only persons from whom it can be expected that they reliably execute their work are considered as personnel. Persons whose capability to react is impaired, for instance through drugs, alcohol, or medication, are not approved.

- Comply with age-specific and job-specific regulations that are applicable at the installation site when selecting personnel.

Unauthorized persons

WARNING!

Danger to unauthorized persons!

Unauthorized persons that do not meet the requirements described here do not know the dangers in the work area.

- Keep away unauthorized persons from working area.
- If in doubt, address these persons to leave the working area.
- Stop working as long as unauthorized persons stay in the working area

2.3 Intended use

The measuring device TESTit is designed for using with a clamping device assembled in a machine tool.

The product should only be used and cleaned by instructed, specialized personnel.

Intended use also includes compliance with all the instructions in this manual.

Any use that extends beyond the intended use, or any other use of the TESTit is considered to be misuse and can cause dangerous situations.

WARNING!

Danger due to misuse!

Misuse of the TESTit can cause dangerous situations.

Particularly refrain from the following uses of the clamping device:

- Use in machine tools with technical data other than that specified on the TESTit.

Claims of any type due to damage arising from non-intended use are excluded.

WARNING!

The use of a measuring head with inserted charging cable can cause serious personal injury and property damage.

- During any use of the measuring head the charging cable must always be taken off!

2.4 Personal protective equipment

Wearing of personal protective equipment is required to minimize health hazards when working with the device.

- Always wear the protective equipment necessary for the respective task when working with the device.
- Follow the instructions that have been posted in the work area.

Always wear

For all tasks always wear:

Protective work clothing

is tight-fitting work clothing with low resistance to tearing, with tight sleeves, and without projecting parts. It is primarily used to protect against entanglement by moving machine parts.

Do not wear rings, chains, or other jewelry.

Safety footwear

for protection against heavy falling parts and slipping on slippery substrates.

For special tasks wear

Special protective equipment is required when executing special tasks. Separate reference is made to this equipment in the specific sections of this manual. This special protective equipment is explained below:

Hard hat

to protect against falling and flying parts and materials.

Protective goggles

to protect eyes from flying parts and liquid splashes.

Protective gloves

to protect hands from friction, abrasion, puncture wounds, or deeper injuries, as well as from contact with hot surfaces.

2.5 Environmental protection

NOTE!

Environmental hazard due to incorrect handling!

Incorrect handling of environmentally hazardous substances, particularly improper disposal, can cause significant environmental damage.

- Always comply with the instructions cited below
- If environmentally harmful substances should inadvertently get into the environment, initiate suitable measures immediately. If in doubt notify the responsible municipal authority about the damage.

The following environmentally harmful substances are used:

Battery / Electronic /CFK

Batteries, electronic parts and extraneous material may contain toxic substances. Ensure that they do not get into the environment.

The clamping force tester TESTit must be disposed of by a specialized disposal company. We recommend to return the measuring head for disposal to HAINBUCH. See the appendix for reference addresses.

3 Technical data

3.1 General Information

NOTE!

The clamping force tester TESTit is intended for use on smooth clamping points.

For measuring a mounted end-stop must be removed.

The clamping force tester TESTIT is available in different sizes and variants.

Information about e.g. dimensions you will find in the following table.

	O. D. clamping			I. D. clamping		
Size Clamping-ø [mm]	18	32	65	28	50	70
Clamping force max. at measuring area [kN]: 3 measuring points	80	140	225	100	200	240
Clamping force max. at measuring area [kN]: 2 measuring points	-	-	150	-	-	-
Speed max. [1/min]	10000	8000	6000	7000	6000	6000
Dimensions ø x length [mm]	Ø 78 x 82	Ø 78 x 82	Ø 78 x 92	Ø 78 x 90	Ø 78 x 98	Ø 98 x 103
Order no.	10607/ 0001	10607/ 0002	10607/ 0003	10607/ 0004	10607/ 0005	10607/ 0006

3.2 Operating conditions

Environment	Specification	Value	Unit
	Temperature range	15 - 40	°C

3.3 Type designation

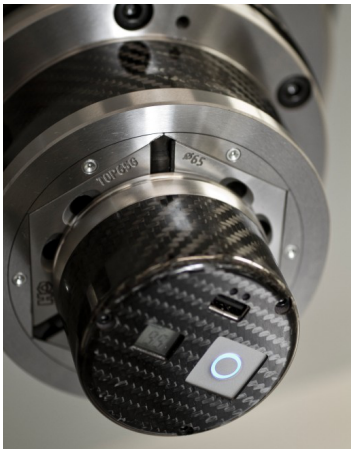


Fig. 1

The type designation is on the TESTit and includes the following information:

1 Serial no.
2 Part no.
3 FA no.

4 F max with 3 measuring points [kN]
5 F max with 2 measuring points [kN]
6 n max [1/min]

4 Structure and function

4.1 Overview

4.1.1 O.D. clamping

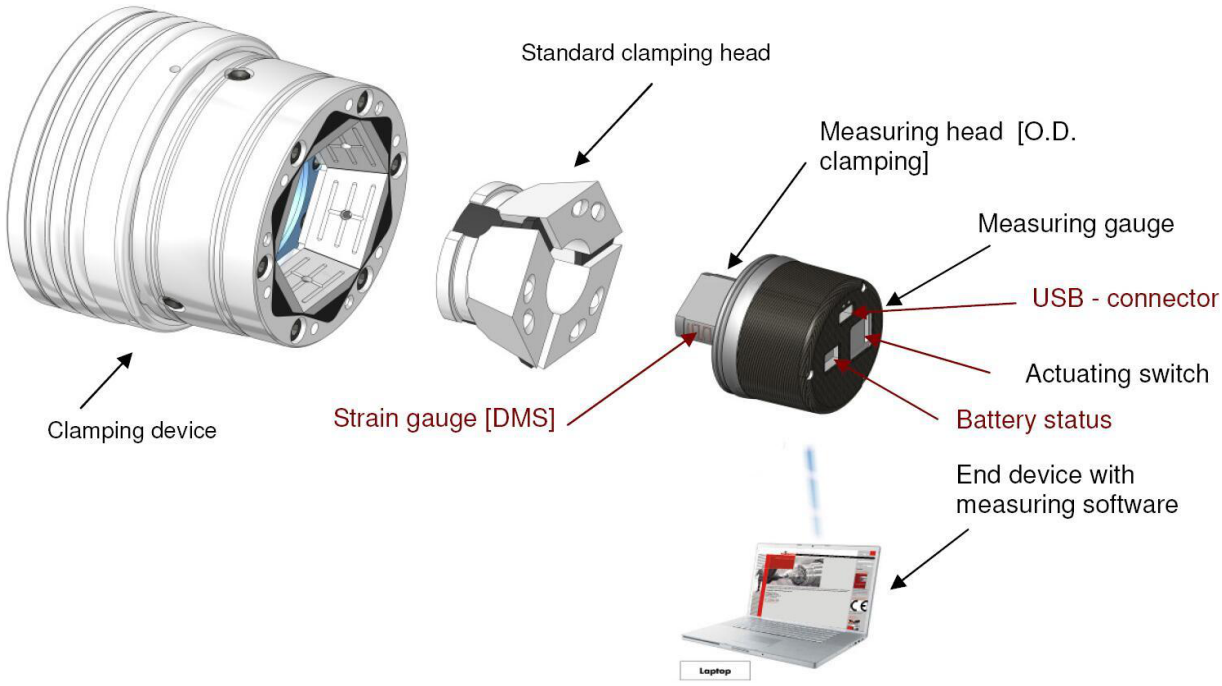


Fig. 2

4.1.2 I.D. clamping

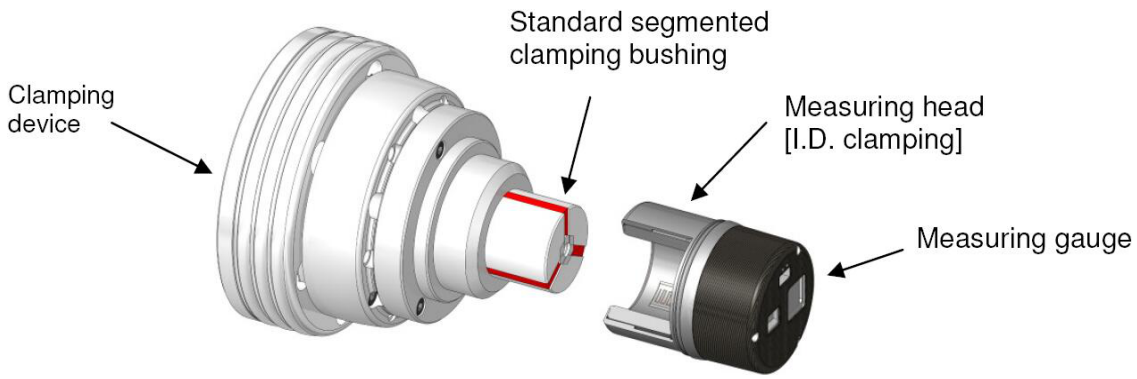


Fig. 3

4.2 Brief description

The holding force of a clamping device is a decisive criterion in mechanical machining of components, except for turning, milling or grinding. For massive structures the holding force should be very strong, with as little loss of centrifugal force at high speed.

On the other hand, in machine tools increasingly thin-walled work pieces are machined, which are already contoured cast, forged or deep-drawn.

If something is clamped too tight, the delicate part can deform.

The clamping force tester TESTit not only works perfectly in outer diameter and under rotation, but also measures with internal diameters exactly the holding force of mandrels. The clamping force values are transferred via Bluetooth to the netbook with its appropriate software.

The clamping force tester TESTit may be used e.g. for

- SPANNTOP
- TOPlus
- Segmentspanndorn Typ 211
- Segmentspanndorn Typ 212

The facts:

- TESTit – the clamping force tester
- Clamping force measurement for external and internal clamping
- can be used stationary and under rotation
- Automatic detection of the measuring head
- Data transmission via Bluetooth
- Li-ion battery for about 4-5 hours of operation

4.3 Functional description

The clamping force tester is chosen depending on the size of clamping devices, external or internal clamping and pushed in and/or on the »standard« clamping element [clamping head or segmented clamping bushing].

For measuring the clamping elements need to have a clamping diameter corresponding to the measuring head, e.g. for the clamping head size AS65 a clamping element with the clamping diameter of 65.0 mm is needed.

In this respect the sensor [DMS] is charged with a radial clamping force and returns the measured clamping force to an internal measuring unit [amplifier]. In real time the calculated clamping force values are transferred via bluetooth to the netbook. The speed of the machine spindle must be taken from the machine controller and put into the connected device.

The HAINBUCH measurement software evaluates the progress of the clamping force course and documents the clamping force values. An evaluation and further processing is possible.

Structure / components

Each »TESTit clamping force tester« is an independent and non-removable unit, consisting of a measuring head and a measuring device. These two components are fixed together and calibrated measurement technique.

Depending on the clamping diameter, internal and external clamping in each case a separate »TESTit clamping force tester« is required.

4.4 Accessories

The accessories described here are included in the scope of delivery of a standard order.

Trouble-free and precise function of HAINBUCH products is only ensured when using original HAINBUCH accessories.

Accessories can be ordered from HAINBUCH.

4.4.1 Netbook

Fig. 4

The measuring software is pre-installed on the delivered netbook.

The Bluetooth connection is realized via the internal Bluetooth interface.

4.4.2 Measuring head

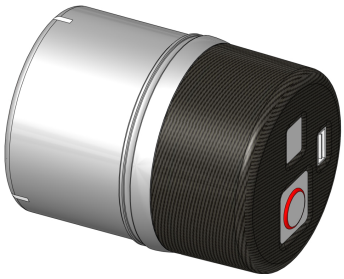


Fig. 5

The measuring head ist for measuring the clamping force at the assembled clamping device.

The measuring head is delivered in a size corresponding to the order.

4.4.3 USB charging cable

Fig. 6

The USB charging cable is for connection of the measuring head to the netbook.

When the measuring head is not needed, it may be recharged by the netbook or the charging device by using the USB charging cable.

4.4.4 USB charging device

Fig. 7

Der USB charging device is for recharging the measuring head.

It is in scope of delivery of the starter set.

5 Transporting, packaging, storing

5.1 Transport inspection

Check delivery immediately upon receipt to ensure that delivery is complete and to identify any transport damage.

Proceed as follows it there is apparent external damage:

- Do not accept the delivery, or only accept it with reservation.
- Note the extend of transport damage on the transport documents or on the transport company's delivery ticket.
- Submit a complaint.

Report any defect as soon as it is detected. Claims for damage compensation can only be enforced during the applicable periods for giving notice of lack of conformity.

5.2 Storing

Under certain circumstances instructions for storage and subsequent storage are affixed to the packages that extend beyond the requirements cited here.
Comply with these instructions accordingly.

Storage of packages

Only store packages under the following conditions:

- Do not store outdoors.
- Store in a dry and dust-free location
- Do not expose to aggressive media
- Protect from direct sunlight
- Avoid mechanical vibration
- Storage temperature: 15 bis 35 °C
- Relative humidity: max. 60 %

Subsequent storage of the clamping device

Only re-store the clamping force tester TESTit under the following conditions:

- Thoroughly clean the clamping force tester TESTit prior to subsequent storage [see section »Cleaning«]
- Store the clamping force tester TESTit in the original container.

6 Connection

6.1 Starting the software

Fig. 8

To start up the software into operation, proceed as follows:

NOTE!

Check the battery holding time of the netbook.

- if necessary connect the netbook with the supplied cable to the electrical socket.

1. Start the netbook.
2. Wait until all the system settings are fully loaded.

NOTE!

For the data connection of the netbook to the measuring head a bluetooth connection is used. Depending on the design for example an external bluetooth stick is available in the netbook.

- Make sure that in the netbook the bluetooth stick is available, undamaged and properly plugged is.

3. Run the application you will find pre-installed on the desktop of the netbook.

6.2 Measuring head

NOTE!

For using the measuring head the battery must be sufficiently charged.

- Connect the measuring head if necessary with the included USB cable to the netbook.
- Keep the connection until the battery of the measuring head is fully charged.

6.2.1 Display

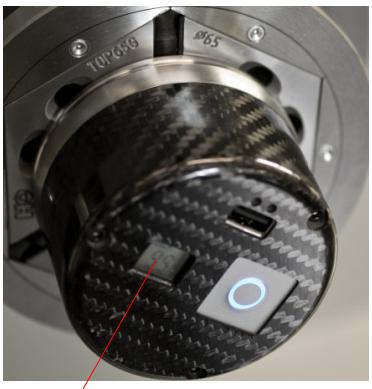


Fig. 9

Displayed at the measuring head:

- approximate charge state [A1]

NOTE!

Display [A1] at the measuring head:

- An undamaged and fully charged battery has a holding time of 4-5 hours.
- After an idle time of about 15 minutes the measuring head turns off automatically.
- With a residual charge of **less than 1%** the measuring head turns off automatically, the measuring head must be recharged.

6.2.2 Connectors

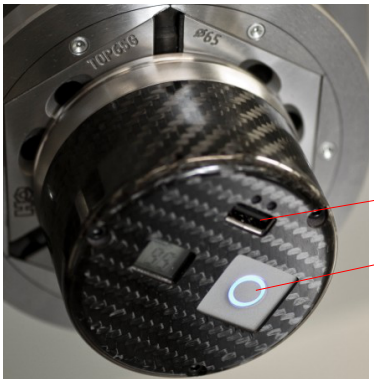


Fig. 10

Connection of the measuring head:

- USB connection [A3]
- ON button [A2]

While charging the ON button [A2] flashes.

As soon as the measuring head is fully charged, the display switches to continuous light.

6.2.3 Conversion of the measuring head [only with O.D. Clamping size 65]

Special tools required:

- Special wrench

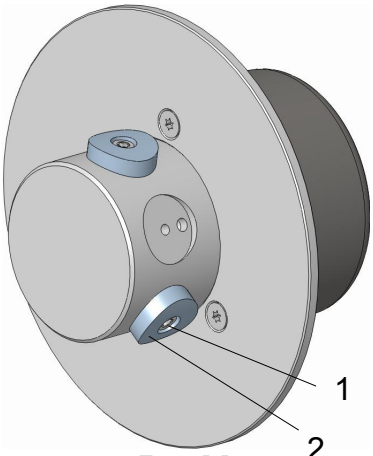


Fig. 11

At delivery the measuring head for O.D. clamping in size 65 it is prepared for 3 clamping points.

NOTE!

For conversion the two measuring bolts next to the free mounting point must be removed!

For conversion of the measuring head from 3 to 2 clamping points the following steps have to be done:

1. Loosen and remove the two mounting screws [1] and remove the two measuring bolts [2].

Fig. 12

2. Put one of the removed measuring bolts into the mounting point that was free at delivery.
3. Screw in the mounting screw and tighten it firmly with the **tightening torque 0.8 Nm**.

NOTE!

Detuning of the sensor due to eccessive torque.

- The predetermined torque may not be exceeded!

NOTE!

After conversion the number of clamping points must be set in the software!

7 Measuring

7.1 Precondition

NOTE!

Check the capacity of the measuring heads battery.

- If necessary connect the measuring head with the included USB cable to the netbook or connect the measuring head with the plug to the power line.
- Keep the connection until the battery is charged completely.

NOTE!

The measuring head may only be used for smooth round clamping points.

- Check the surface of the clamping point.

NOTE!

While clamping the measuring head may not touch to a work piece end-stop or to the mandrels body and/or housing.

- Check the clamping diameter of the segmented clamping bushing and/or the clamping head!

NOTE!

O. D. clamping:

- Put in the measuring head in a way, that it touches the clamping head.

I. D. clamping MANDO T212 / MANDO T812:

- To account the stroke distance, place the measuring head in such a way that the distance to the segmented clamping bushing is approximately 5 mm.

7.2 Possible application

NOTE!

Before using:

- Make sure that the measuring head is sufficient charged.
- Take off the charging cable!

NOTE!

To guarantee the measuring accuracy the measuring head must be in the correct position.

- The markings on the measuring bolts must always be positioned in the center of the steel segments of segmented clamping bushing or clamping head!

NOTE!

For the correct use of the measuring head there must be given sufficient reserve stroke

7.2.1 I. D. clamping

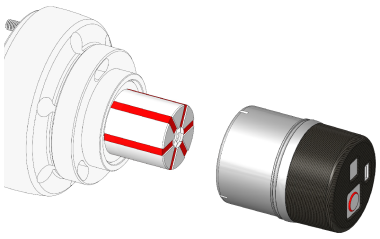


Fig. 13

To start the inner measurement, proceed as follows:

1. Assemble the segmented mandrel to the machine.
2. Assemble the segmented clamping bushing and/or the clamping unit.
3. Place the measuring head over the segmented clamping bushing on the mandrel, stop just before the measuring head is touching the face surface.
4. Clamp the measuring head.

7.2.2 O. D. clamping

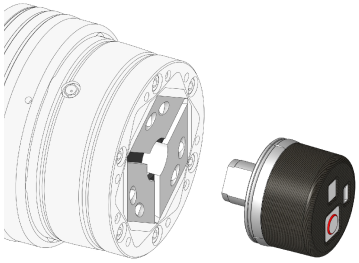


Fig. 14

To start the outer measurement, proceed as follows:

1. Assemble the chuck to the machine.
2. Put the clamping head into the clamping device.
3. Put the measuring head into the clamping head.
4. Clamp the measuring head.

7.3 Settings

The delivered measuring head is already known in the software, so the measuring can be started immediately.
The following additional adjustments can be made:

1. Load an existing connection.
2. Search and save a new measuring head.
3. Setting the number of clamping points [only with O.D. clamping size 65].
4. Add or delete an inspector.
5. Choose a language [german/english].

To change settings start the [pre-installed] software on the netbook.

7.3.1 Load existing measuring head

To load an existing measuring head proceed as follows:

> ! The measuring head in scope of delivery is already known by the software.

1. Switch on the measuring head.
1. Switch into the tab »Measuring data«.
2. Choose a suitable, saved connection.
3. Klick »Connect«.

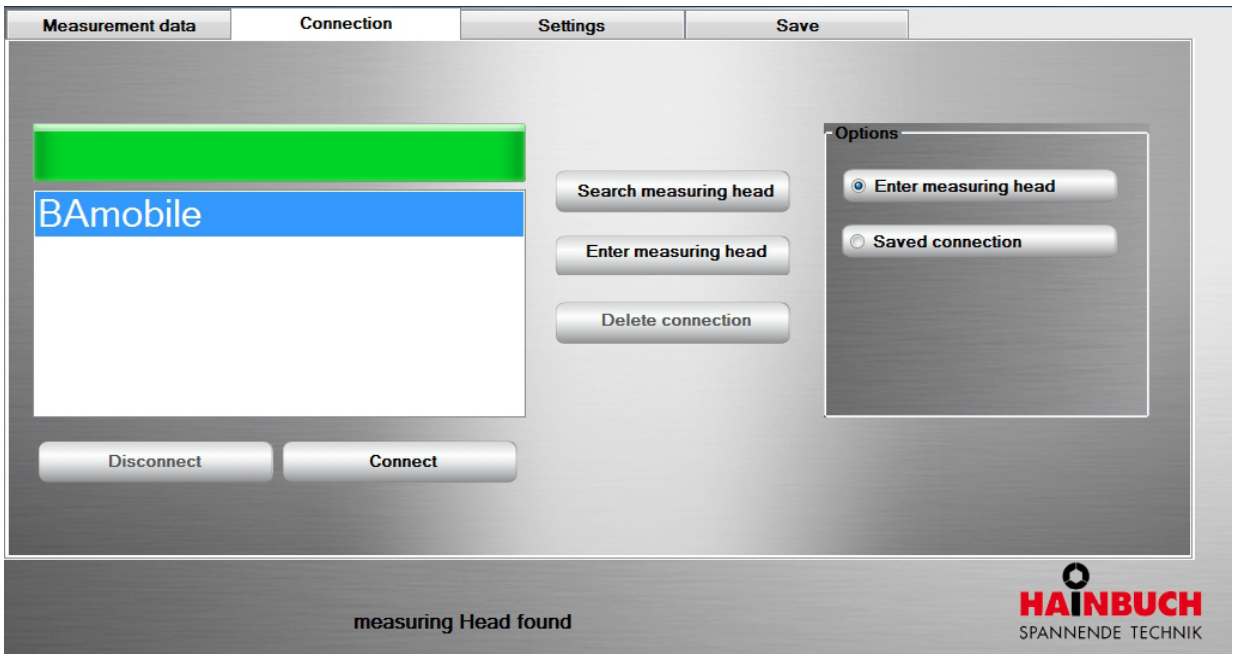
A connection with the selected measuring head will be established.

7.3.2 Search and safe a new measuring head

To connect a new measuring head, proceed as follows:

1. Switch on the measuring head.
2. Switch to the tab »Connection«.
3. Click »Search measuring head«.

The windows search starts.



4. Select the found measuring head, click »Add measuring head«.

The measuring head will be connected via bluetooth.

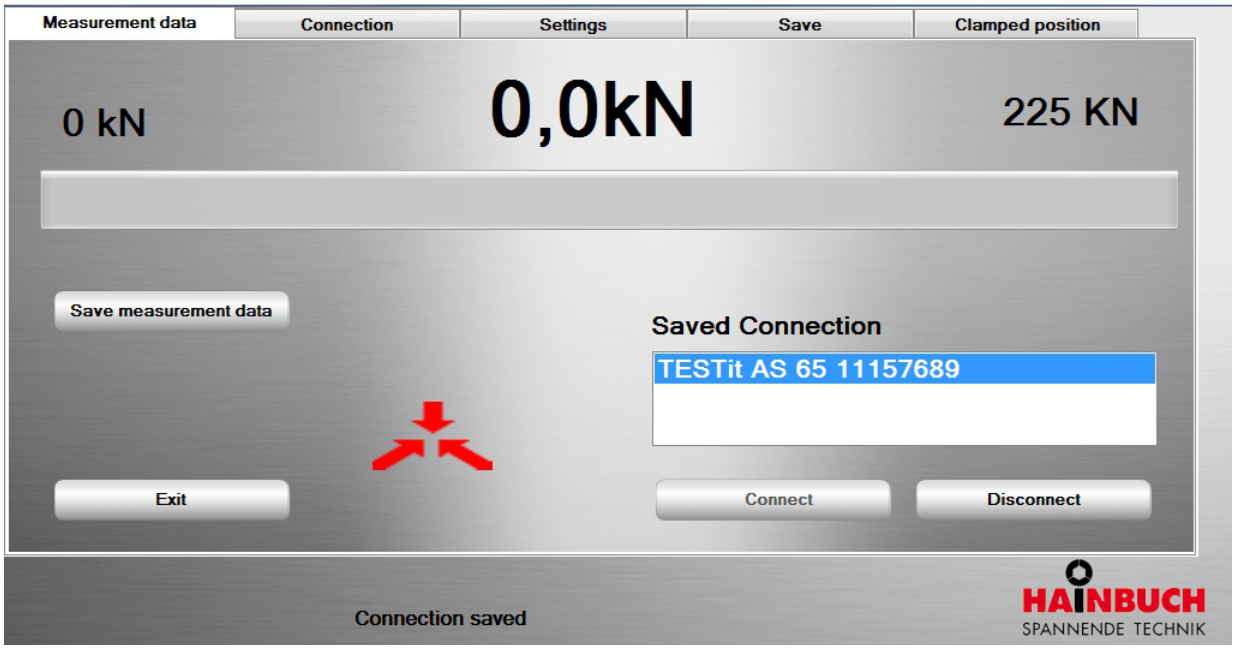
Switch to the tab »Measurement data«, the new measuring head is available for connection.

7.3.3 Number of clamping positions [only with size 65]

With the measuring head of size 65 you have the possibility to specify the number of clamping positions.

1. Switch into the tab »Clamping positions«.
2. Select the wanted and needed number of clamping positions.
3. Save your selection by clicking on »Apply«.

The saved number of clamping positions is now shown on the main tab »measurement data«.



7.3.4 Edit the tester

You can

- add a new tester
- delete a saved tester

At subsequent saving of the measurement the tester must be chosen.

To create a new tester follow these steps:

1. Switch into the tab »Settings«.
2. Click »Add tester«.
3. Enter the name of the tester into the opened window.
4. Confirm with »OK«.
5. Click »Save settings«.

The new tester is saved and is available for later use.

To delete an existing tester proceed as follows:

1. Switch into the tab »Settings«.
2. Select a name in the field »Tester«.
3. Click »Delete tester«.
4. Click »Save settings«.

The tester is deleted and not longer available.

7.3.5 Edit the machine

You can

- create a new machine
- delete a saved machine

For later saving of measurements, one machine must be selected!

To add a new machine proceed as follows:

1. Switch to the tab »settings«.
2. Click »Add machine«.
3. Enter the name of the machine into the opened window.
4. Confirm with »OK«.
5. Click »Add machine«.
6. Click »Safe settings«.

The new machine is saved and is available for later use.

To delete an existing machine, proceed as follows:

1. Switch in the tab »settings«.
2. Select a machine in the field »Machine«.
3. Click »Delete machine«.
4. Click »Save settings«.

The machine is deleted and is not longer available for use.

7.3.6 Edit language

The software is available in two languages:

- german
- english

To change the language proceed as follows:

1. Switch to the tab »Settings«.
2. Select the wanted language.
3. Click »Save«.

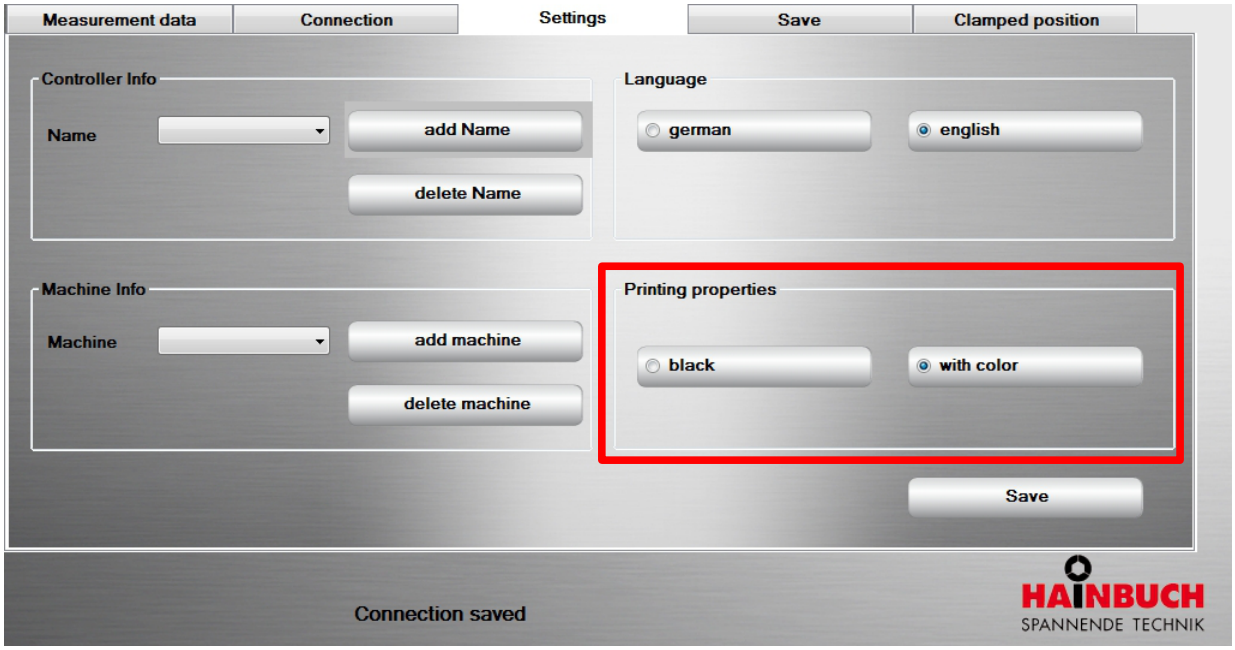
The selected language is saved and used immediately.

7.3.7 Printer settings

The measurement results can be defined in two ways for the future PDF printing:

- black
- with color

To set the printer properties, proceed as follows:



1. Switch to the tab »Settings«.
2. Select the wanted printer property.
3. Click »Safe«.

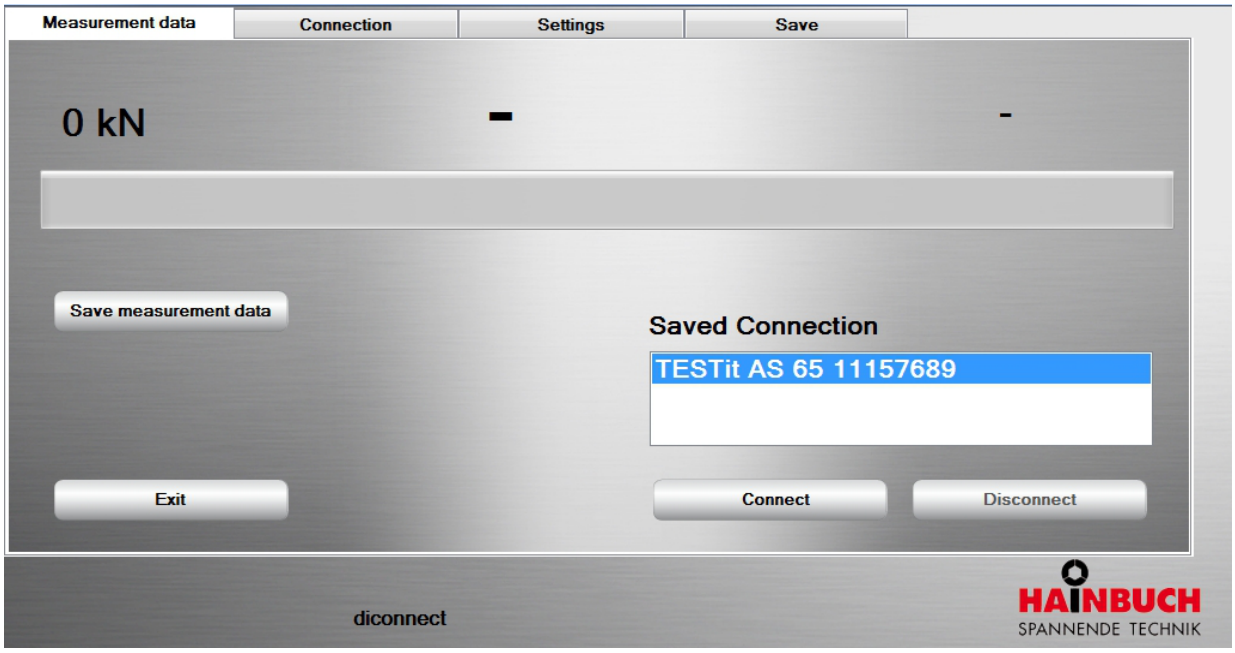
The selected printer settings are saved and is now used for saving the measuring results.

7.4 Measuring process

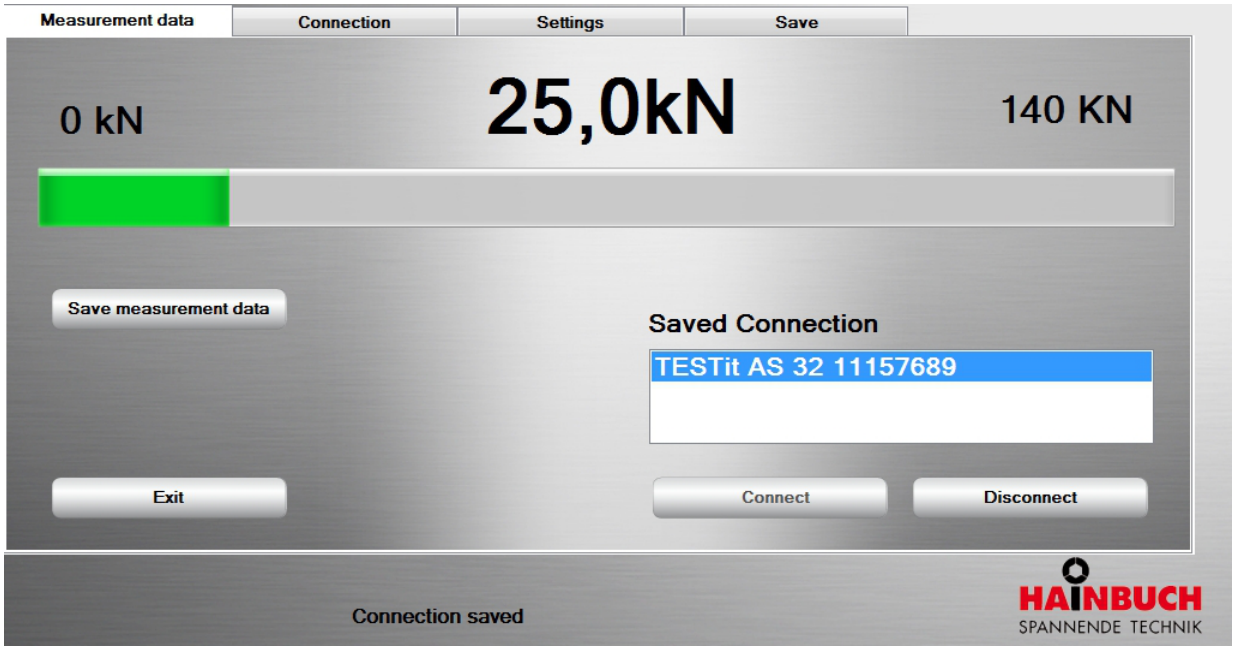
NOTE!

For the measuring process alle settings must be done, the connection to the measuring head must be saved.

To perform a measurement, proceed as follows:



1. Switch on the measuring head.
2. Switch to the tab »Measurement data«.
3. Select a measuring head in the field »Saved connections«.
4. Click »Connect«.

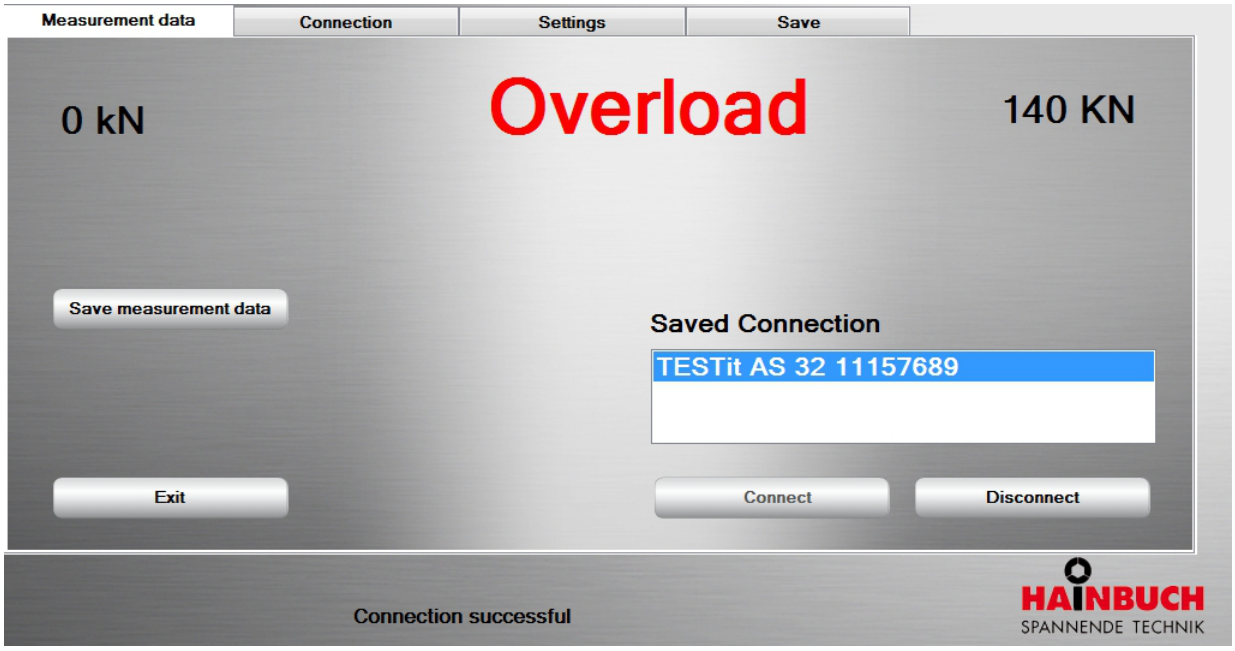


NOTE!

The measured force is automatically displayed.

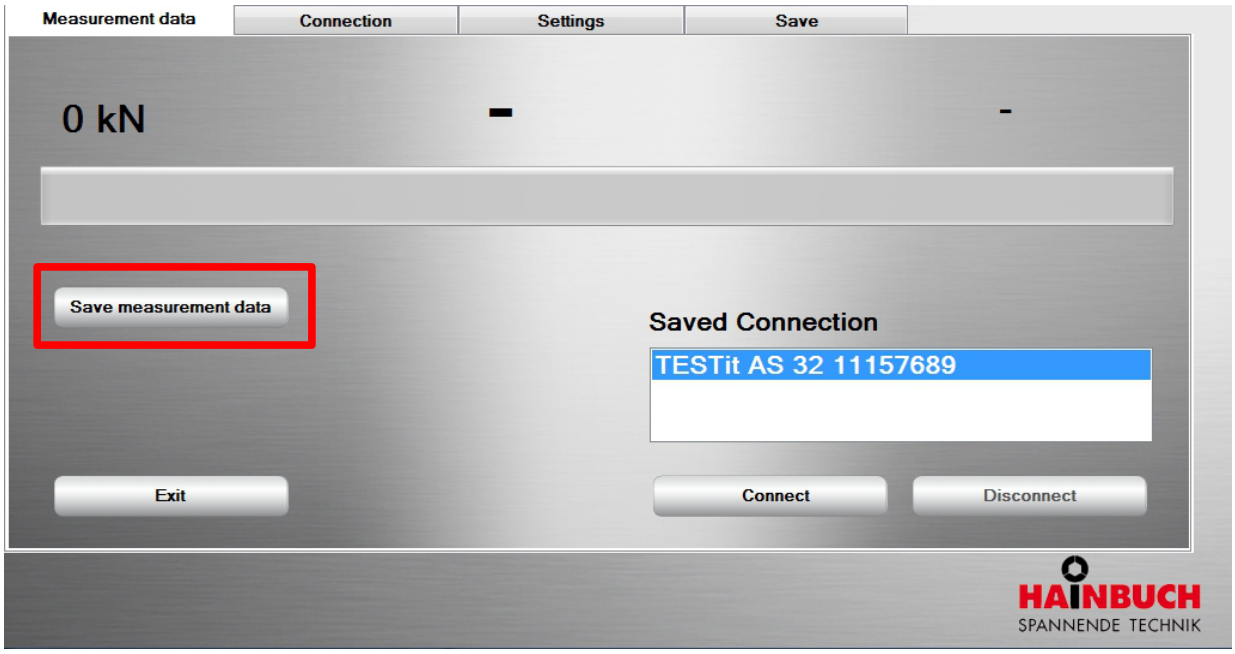
- With overload: Value and bar become red
- At 5% above the maximum value: instead of the measuring value the output text »overload« is shown.

Example: Overload



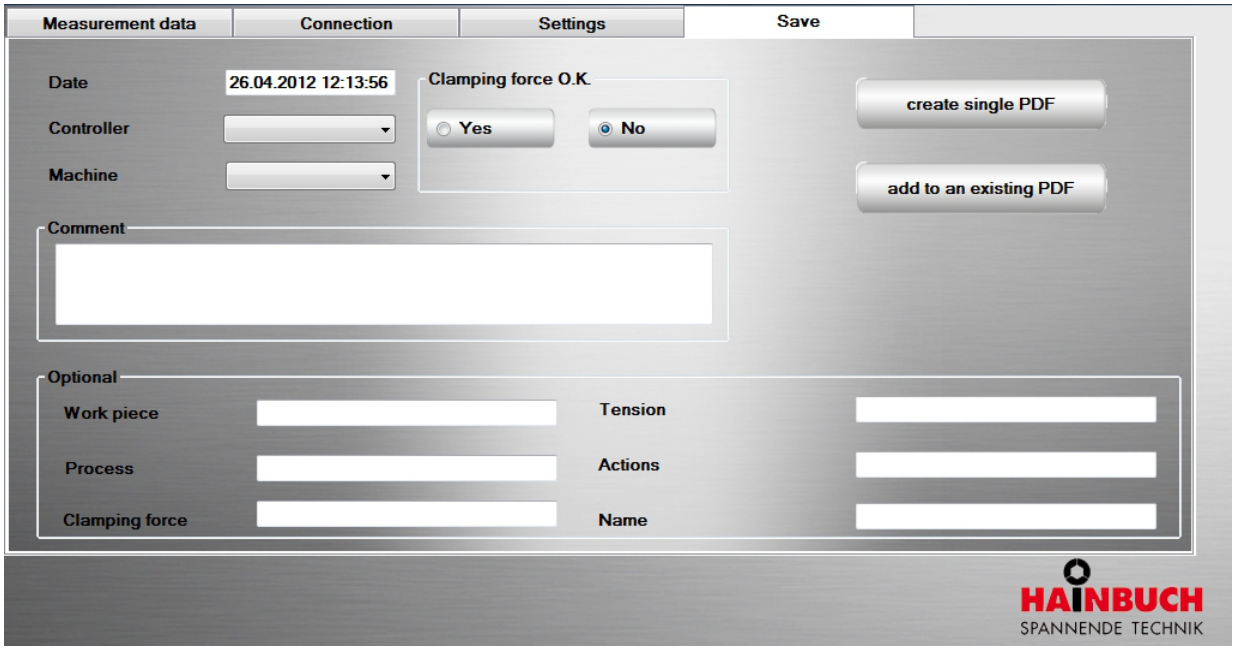
7.5 Saving measurements

The measurement results may be saved in PDF format.



For saving proceed as follows:

1. Click »Save measurement data«. Now you automatically switch to the tab »Save«.



NOTE!

The current date and current time will be determined automatically!

2. Select a tester from the list.
3. Select a machine from the list.
4. Decide whether the clamping force OK by clicking »Yes« or »No«.
5. Enter in the other fields the needed data, e.g. work piece, clamping pressure, etc.

> **NOTE!**
>
> Select the type of PDF file creation:
> - Create a single PDF.
> - Create a progressional PDF:
>   The actual measuring data will be added to the existing PDF of the selected machine.

6. Click »Create PDF«.

> **NOTE!**
>
> A file name in a combination of
> - name of measuring head
> - current date
> - current time
>
> is offered.
> Now select a location for the PDF file.

8 Maintenance / Service

The clamping force tester TESTit is a measuring device an must be handled carefully.

NOTE!

Pay attention to the surface of the measuring socket. Because of the clamping forces that occur, it can be worn with frequent use.

- Replace the TESTit at visible or measurable signs of wear.

8.1 Subsequent storage of the clamping device

The clamping force tester TESTit must be cleaned and treated with corrosion protection for subsequent storage [see section »Cleaning«].

NOTE!

The storage conditions are specified in the section »Transport, packaging and storage«.

8.2 Cleaning

- Auxiliary material required:
  - Ester-free, non-polar cleaning agent
  - Soft, lint-free cloth

1. Clean the measuring head with cleaning agent and a cloth; remove all oil and grease residues.

8.3 Annual factory calibration

! Service work by customer at TESTit measuring head is not allowed!

At delivery the TESTit is pre-calibrated by factory, readable in the service passport.

To ensure accuracy, the measuring head TestIt must be calibrated annually.

For the annual factory calibration send the TESTit measuring head and the corresponding service passport back to HAINBUCH.

Additional service work will be noted by HAINBUCH in the passport service. The service passport will be sent back to the customer together with the TESTit measuring head.

TESTit Kalibrierung //Calibration

Erstkalibrierung Initial calibration Datum // Date: _____ Unterschrift //Signature: _____	Werkskalibrierung Factory calibration Datum // Date: _____ Unterschrift //Signature: _____	Werkskalibrierung Factory calibration Datum // Date: _____ Unterschrift //Signature: _____
Werkskalibrierung Factory calibration Datum // Date: _____ Unterschrift //Signature: _____	Werkskalibrierung Factory calibration Datum // Date: _____ Unterschrift //Signature: _____	Werkskalibrierung Factory calibration Datum // Date: _____ Unterschrift //Signature: _____

Bewahren Sie diesen Servicepass zusammen mit dem Messkopf auf und geben Sie die Prüfprotokolle weiter an Ihre Messmittelverwaltung.
Keep this service pass with the measuring head and forward the test logs to your measuring tool management organization.

8.4 Disposal

If a return or disposal agreement has not been concluded, then recycle disassembled components.

NOTE!

Improper disposal causes environmental damage!

Batteries are subject to treatment as special waste, and should only be disposed of by approved specialist companies!

NOTE!

Composite materials!

For disposal clamping devices which include composite materials [mineral cast, CFK] must be returned at HAINBUCH!

Local municipal authorities or specialized disposal companies provide information on environmentally-responsible disposal.

We recommend to return the measuring head for disposal to HAINBUCH. See the appendix for reference addresses.

9 Trouble shooting

Possible fault causes and the tasks to correct these faults are described in the following section.

Contact the manufacturer if there are faults that cannot be corrected by following the instructions below; see the service address on the back of this operating instruction.

9.1 Safety

Trouble shooting

The following always applies:

1. For faults that pose a direct danger for personnel and or property immediately execute the emergency-stop function.
2. Determine the cause of the fault.
3. If correction of the fault requires work in the danger zone, put the machine in set-up mode.
4. Immediately inform the responsible parties at the installation site of the fault.
5. Depending on the type of fault, either have authorized specialized personnel correct the fault, or correct it yourself.

   The trouble shooting table provided below lists personnel who are authorized to correct the fault.
6. If there is a fault that was not caused by the clamping device the cause of the fault may be in the machine area. See the operating manual for the machine in this regard.

9.2 Trouble shooting table

Fault	Possible cause	Fault correction	Corrected by
After pressing the ON button on the measuring head there is nothing displayed.	The battery capacity of the measuring head is too low.	Charge the battery of the measuring head.	Specialist
	The ON button wasn't pressed properly.	Press the ON button again.	Specialist
There are no data to save	The measuring head is not turned on.	Switch on the measuring head.	Specialist
	The battery capacity of the measuring head is too low.	Charge the battery of the measuring head.	Specialist
	Bluetooth connection is faulty	Check the connection of the measuring head and netbook.	Specialist
The netbook does not boot	The battery is empty	Charge the battery.	Specialist
	The netbook has a defect	Send the netbook back to the manufacturer	HAINBUCH
Measuring head is damaged	Measuring head has fallen / struck	A factory function testing is necessary and possibly an exchange of components.	HAINBUCH
The display of the measuring head is off	The accu of the measuring head is empty	Connect the charging cable and recharge the measuring head.	Specialist
The connection to the measuring head can not be initialized	The measuring head is not set on	Switch on the measuring head and repeat the connection	Specialist

10 Appendix

10.1 Service Hotline

Order Hotline

Quickly ordered and delivered. A call is all it takes:
+49 [0]7144. 907-333

Schedule Hotline

Current status of your order? Just call:
+49 [0]7144. 907-222

24h emergency call

Has there been a crash or other technical emergency?
Our experts are at your service around the clock:
+49 [0]7144. 907-444

10.2 Representatives

The sales partners and service employees listed below are available for further consultation or support.

Overview of German postal codes:

Mi	010 – 049	Si	350 – 369	Hen	560 – 569	Rd	730 – 739	Fs	880 – 899
Sl	060 – 089	Bs	370 – 399	Re	570 – 599	Ti	740 – 749	Sb	900 – 919
Mii	090 – 189	Ft	400 – 479	Si	600 – 659	He	750 – 799	Hs	920 – 949
Wt	190 – 289	Bo	480 – 499	Ti	660 – 699	Hs	800 – 819	Sb	950 – 969
Bs	290 – 319	Ft	500 – 549	Rt	700 – 709	Gg	820 – 829	Si	970 – 978
Bo	320 – 339	Hen	550 – 559	Rt	710 – 719	Hs	830 – 859	Ti	979
Bs	340 – 349	Si	400 – 479	Fs	720 – 729	Gg	860 – 879	Sl	980 – 999

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EC Declaration of conformity

Manufacturer	HAINBUCH GmbH Spannende Technik Erdmannhäuser Straße 57 71672 Marbach Deutschland
Product denomination	Clamping force tester TESTit

The product above is complying to the essential requirements laid down in Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility (2004/108/EC).

The product described above complies with the requirements of the following documents:

- EN 61000-6-2 Electromagnetic compatibility [EMC] - Part 6-2; Generic standards - Immunity - Industrial Environment 2006-03
- EN 61000-6-3 Electromagnetic compatibility [EMC] - Part 6-3; Generic standards - Emission standard - residential area 2007-09
- EN 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements 2002-08

This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user. The declaration is no more valid, if the product is modified without agreement.

A corresponding manual is delivered with each product.

Marbach, 01 April 2012	Alfred Hillinger, Head of engineering
Place, date	First name, surname and function of signatory

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05.2013 Part no.: 80001/0177_en Subject to technical modifications